

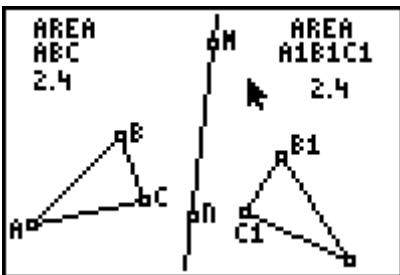
Teacher Notes

G.G.55 Investigate, justify, and apply the properties that remain invariant under line reflections. AREA

Lesson Launcher Objective:

- 1) Discover that area is preserved under a line reflection.

Procedure:

<p>The student opens Cabri Jr. and the APPVAR REFLECT3</p>	<p>$\Delta A_1B_1C_1$ is the image of ΔABC under a glide reflection.</p>
 <p>The screenshot shows a software interface with two triangles, ΔABC and $\Delta A_1B_1C_1$, positioned on either side of a vertical line of reflection. The area of ΔABC is shown as 2.4, and the area of $\Delta A_1B_1C_1$ is also shown as 2.4. The vertices are labeled A, B, C and A1, B1, C1. A vertical line with arrows at both ends is drawn between the two triangles, representing the line of reflection.</p>	<p>The measures of the areas of the triangles have been indicated.</p> <p>The student will explore the figure by dragging the vertices of the ΔABC</p>

- 1.) Select grab and drag point A.

What is changing? [The areas of the triangles.](#)

What is remaining the same? [The area of the pre-image and image are always the same.](#)

- 2.) Select grab and drag point B.

What is changing? [The areas of the triangles.](#)

What is remaining the same? [The area of the pre-image and image are always the same.](#)

3) Select, grab and drag point C. As you move point C stop and record 5 successive trials by entering the areas in the table below.

Trial Number	Area of $\triangle ABC$	Area of $\triangle A_1B_1C_1$
1		
2		
3		
4		
5		

Answers will vary student to student.

- 4) What seems to be true about the areas of $\triangle ABC$ and $\triangle A_1B_1C_1$? They are always equal.
- 5) Under the transformation glide reflection is area preserved? yes
- 6) In your own words explain what it means when a property is preserved.

Answers will vary.